



6-29-04

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EXPRESS MAIL LABEL NO.: EV 437487057 US

US PATENT APPLICATION
Docket No. 48900-01020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Moon, James E., et al.)
)
Application No.:	10/814,207) Art Unit
)
Filed:	March 31, 2004)
)
For:	ELECTROSPRAY NOZZLE AND MONOLITHIC SUBSTRATE)
)
Examiner:	Not Assigned)

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In compliance with the duty to disclose information material to patentability pursuant to 37 C.F.R. 1.56, it is respectfully requested that this Supplemental Information Disclosure Statement be entered and the documents listed on attached Forms PTO/SB/08A and PTO/SB/08B be considered by the Examiner and made of record. Copies of all documents are not enclosed as they can be found in the parent application. In accordance with 37 C.F.R. § 1.97(g) and (h), filing of this Information Disclosure Statement is not to be construed as a representation that a search has been made or an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b). Further, no representation is made by Applicants herein that no other possible material information as defined in 37 C.F.R. § 1.56(b) exists.

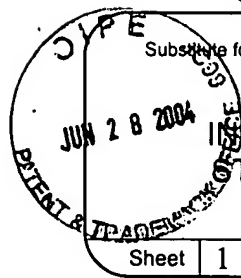
To the extent any additional fees are due in connection with this communication,
Applicants request that they be withdrawn from Deposit Account No. 08-2665.

DATED this 28th day of June, 2004.

Respectfully submitted,



David O. Seeley, Reg. No. 30,148
Customer No. 34013
Holme Roberts & Owen LLP
299 South Main Street, Suite 1800
Salt Lake City, Utah 84111
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1

of 7

Complete if Known

Application Number	10/814,207
Filing Date	03/31/2004
First Named Inventor	James E. Moon
Art Unit	
Examiner Name	
Attorney Docket Number	48900-01020

U.S. PATENT DOCUMENTS

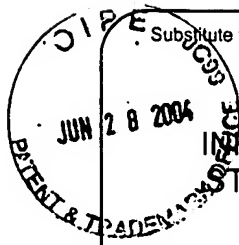
Examiner Initials*	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)				
	1	US	2001-0001474	12-21-2000	Davis, et al.	
	2	US	2001-0001460	12-21-2000	Davis, et al.	
	3	US	2001-0001456	12-21-2000	Davis, et al.	
	4	US	2001-0001455	12-21-2000	Davis, et al.	
	5	US	2001-0001452	12-21-2000	Davis, et al.	
	6	US	3,150,442	09-1964	Straw, et al.	
	7	US	3,538,744	10-11-1976	Karasek	
	8	US	3,586,933	06-1971	Bonini, Joseph N.	
	9	US	3,611,071	10-1971	Agusta, Benjamin	
	10	US	3,663,194	05-1972	Greenstein, et al.	
	11	US	3,669,881	06-13-1972	Cremer, et al.	
	12	US	3,725,186	04-1973	Lynch, John F.	
	13	US	3,738,759	06-12-1973	Dittrich, et al.	
	14	US	3,770,405	11-1973	DeAngelis, et al.	
	15	US-	3,915,652	10-28-1975	Natelson	
	16	US	3,921,916	11-1975	Bassous	
	17	US	3,940,301	02-1976	Straw, et al.	
	18	US	4,007,464	02-1977	Bassous, et al.	
	19	US	4,056,324	11-01-1977	Gohde	
	20	US	4,092,166	05-30-1978	Olsen, et al.	
	21	US	4,209,696	06-1980	Fite	
	22	US-	4,356,722	11-02-1982	Bunce, et al.	
	23	US	4,366,118	12-28-1982	Bunce, et al.	
	24	US	4,369,664	01-25-1983	Bunce, et al.	
	25	US	4,403,234	09-06-1983	Miura, et al.	
	26	US	4,403,234	09-1983	Miura, et al.	
	27	US	4,437,103	03-1984	Ikeda	

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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



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Complete if Known

Application Number	10/814,207
Filing Date	03/31/2004
First Named Inventor	James E. Moon
Art Unit	
Examiner Name	
Attorney Docket Number	48900-01020

Sheet 2 of 7

28	US	4,459,267	07-10-1984	Bunce, et al.	
29	US	4,480,259	10-30-1984	Kruger, et al.	
30	US	4,489,259	12-18-1984	White, et al.	
31	US	4,490,728	12-25-1984	Vaught, et al.	
32	US	4,590,482	05-20-1986	Hay, et al.	
33	US	4,593,728	06-10-1986	Whitehead, et al.	
34	US	4,683,042	07-28-1987	Scott	
35	US	4,708,782	11-24-1987	Andresen, et al.	
36	US	4,728,392	03-01-1988	Miura, et al.	
37	US-	4,728,392	03-1988	Miura, et al.	
38	US	4,733,823	03-1988	Waggener, et al.	
39	US	4,842,701	06-27-1989	Smith, et al.	
40	US	4,879,097	11-07-1989	Whitehead, et al.	
41	US	4,891,120	01-02-1990	Sethi, et al.	
42	US	4,908,112	03-13-1990	Pace	
43	US-	4,983,038	01-08-1991	Ohki, et al.	
44	US	4,999,493	03-12-1991	Allen, et al.	
45	US-	5,015,845	05-14-1991	Allen, et al.	
46	US-	5,110,745	05-05-1992	Kricka, et al.	
47	US-	5,126,022	06-30-1992	Soane, et al.	
48	US	5,132,012	07-21-1992	Miura, et al.	
49	US	5,162,650	11-10-1992	Bier	
50	US	5,180,480	01-19-1993	Manz	
51	US	5,182,366	01-26-1993	Huebner, et al.	
52	US	5,245,185	09-14-1993	Busch, et al.	
53	US	5,269,900	12-14-1993	Jorgenson, et al.	
54	US	5,283,036	02-01-1994	Hofmann, et al.	

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55	US	5,294,426	03-15-1994	Sekine, et al.	
56	US	5,296,114	03-22-1994	Manz	
57	US	5,296,375	03-22-1994	Kricka, et al.	
58	US	5,302,533	04-12-1994	Kricka	
59	US	5,304,487	04-19-1994	Wilding, et al.	
60	US	5,306,621	04-26-94	Kricka	
61	US	5,316,680	05-31-1994	Frechet, et al.	
62	US	5,328,578	07-12-1994	Gordon	
63	US	5,331,159	07-19-1994	Apffel, Jr., et al.	
64	US	5,332,481	07-26-1994	Guttman	
65	US	5,334,310	08-02-1994	Frechet, et al.	
66	US	5,338,427	08/16/1994	Shartle, et al.	
67	US	5,349,186	09-20-1994	Ikonomou, et al.	
68	US	5,374,834	12-20-1994	Geis, et al.	
69	US	5,376,252	12-27-1994	Ekstrom, et al.	
70	US	5,387,329	02-07-1995	Foos, et al.	
71	US	5,401,376	03-28-1995	Foos, et al.	
72	US	5,401,963	03-28-1995	Sittler	
73	US	5,415,841	05-16-1995	Dovich, et al.	
74	US	5,421,980	06-06-1995	Guttman	
75	US	5,423,964	06-13-1995	Smith, et al.	
76	US	5,427,946	06-27-1995	Kricka, et al.	
77	US	5,429,734	07-04-1995	Gajar, et al.	
78	US	5,431,807	07-11-1995	Frechet, et al.	
79	US	5,445,324	08-29-1995	Berry, et al.	

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80	US	5,453,185	09-26-1995	Frechet, et al.	
81	US	5,481,110	01-02-1996	Krishnaswamy, et al.	
82	US	5,486,335	01-23-1996	Wilding, et al.	
83	US	5,493,115	02-20-1996	Deinzer, et al.	
84	US	5,495,108	02-27-1996	Apffel, Jr., et al.	
85	US	5,498,392	03-12-1996	Wilding, et al.	
86	US	5,501,883	03-26-1996	Ishikawa, et al.	
87	US	5,501,893	03-26-1996	Laermer, et al.	
88	US	5,505,832	04-1996	Laukien, et al.	
89	US	5,512,131	04-30-1996	Kumar, et al.	
90	US	5,512,451	04-30-1996	Kricka	
91	US	5,523,566	06-04-1996	Fuerstenau, et al.	
92	US	5,536,939	07-16-1996	Freidhoff, et al.	
93	US	5,541,408	07-30-1996	Sittler	
94	US	5,563,639	10-08-1996	Cameron, et al.	
95	US	5,572,023	11-05-1996	Caprioli	
96	US	5,608,217	03-04-1997	Franzen, et al.	
97	US	5,640,010	06-17-1997	Twerenbold	
98	US	5,641,400	06-24-1997	Kaltenbach, et al.	
99	US	5,644,131	07-01-1997	Hansen	
100	US	5,647,979	07-15-1997	Liao, et al.	
101	US	5,652,427	07-29-1997	Whitehouse, et al.	
102	US	5,705,813	01-06-1998	Apffel, et al.	
103	US	5,716,825	02-10-1998	Hancock, et al.	
104	US	5,747,815	05-05-1998	Young, et al.	
105	US	5,750,988	05-12-1998	Apffel, et al.	
106	US-	5,779,868	07-1998	Parce, et al.	
107	US	5,789,746	08-04-1998	Kato, et al.	

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108	US	5,800,692	09-01-1998	Naylor, et al.	
109	US	5,804,022	09-08-1998	Kaltenbach, et al.	
110	US	5,856,082	01-05-1999	Aebersold, et al.	
111	US	5,872,010	02-16-1999	Karger, et al.	
112	US	5,876,957	03-02-1999	Douglas, et al.	
113	US	5,877,495	03-02-1999	Takada, et al.	
114	US	5,917,184	06-29-1999	Carson, et al.	
115	US-	5,917,185	06-29-1999	Yeung, et al.	
116	US	5,969,351	10-19-1999	Nabeshima, et al.	
117	US	5,969,353	10-19-1999	Hsieth	
118	US	5,972,187	10-1999	Parce, et al.	
119	US	5,993,633	11-30-1999	Smith, et al.	
120	US	5,994,696	11-30-1999	Tai, et al.	
121	US	6,005,245	12-21-1999	Sakairi, et al.	
122	US	6,007,775	12-28-1999	Yager	
123	US	6,032,876	03-07-2000	Bertsche, et al.	
124	US	6,060,705	05-09-2000	Whitehouse, et al.	
125	US	6,066,848	05-23-2000	Kassel, et al.	
126	US-	6,068,749	05-2000	Karger, et al.	
127	US	6,110,343	08-29-2000	Ramsey, et al.	
128	US	6,114,693	09-05-2000	Hirabayashi, et al.	
129	US	6,171,875	01-2001	Silverbrook	
130	US	6,245,227	06-12-2001	Moon, et al.	
131	US	6,394,945 B2	05-28-2002	Moon, et al.	
132	US	6,417,510 B2	07-09-2002	Moon, et al.	
133	US	6,454,938 B2	09-24-2002	Moon, et al.	

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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
	134	DE 43 18 407	12-08-1994	Howitz, Steffen, Dr.		
	135	EP 0 964,428 A2	12-15-1999	Yin, Hungfeng		<input type="checkbox"/>
	136	EP 0 966,022 A2	12-22-1999	Bateman, Robert H.		<input type="checkbox"/>
	137	EP 259,796	01-03-1996	Andresem, Brian D.		
	138	EP 565,027	03-05-1997	Jarrell, Joseph A.		
	139	EP 588,952	09-01-1999	Whitehouse, Craig M.		
	140	EP 637,998	07-03-1996	Wilding, Peter		
	141	EP 639,223	07-03-1996	Kricka, Larry J.		
	142	EP 677,322	10-18-1995	Maruyama, Naosuke		
	143	EP 692,713	01-17-1996	Apffel, James A., Jr.		
	144	EP 860,858	08-26-1998	Waki, Hiroaki		
	145	GB 2 260 282	04-14-1993	Jauernig, Udo		
	146	GB 2,287,356	09-13-1995	Mann, Matthias		
	147	PCT/US00/34999	07-12-01	Schultz, Gary A.		
	148	PCT/US01/01785	07-26-01	Corso, Thomas N.		
	149	WO 00/52455	09-08-2000	Corso, Thomas N.		
	150	WO 01/50499	07-12-2001	Schultz, Gary A.		<input type="checkbox"/>
	151	WO 0153819	07-26-2001	Corso, Thomas N.		<input type="checkbox"/>
	152	WO 92/03720	03-05-1992	Maule, Colin		
	153	WO 93/22053	11-11-1993	Wilding, Peter		<input type="checkbox"/>
	154	WO 93/22055	11-11-1993	Wilding, Peter		<input type="checkbox"/>
	155	WO 96/04547	02-15-1996	Ramsey, J. Michael		

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Sheet	7	of	7	Attorney Docket Number		48900-01020	

	156	WO 96/14933	05-23-1996	Kricka, Larry J.	
	157	WO 96/14934	05-23-1996	Wilding, Peter	
	158	WO 96/15269	05-23-1996	Wilding, Peter	
	159	WO 97/04297	02-1997	Karger, Barry L.	

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Application Number	10/814,207
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Art Unit	
Examiner Name	
Attorney Docket Number	48900-01020

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8

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		Amish Desai; Yu-Chong Tai; Michael T. Davis; and, Terry D. Lee, " <i>A MEMS Electro Spray Nozzle for Mass Spectroscopy</i> ," 1997 International Conference in Solid-State Sensors and Actuators, Chicago, June 16-19, 1997, p. 927-930.	
		Andren, Per E., et al., " <i>Micro-Electrospray: Zeptomole/Attomole per Microliter Sensitivity for Peptides</i> ," 1994, American Society for Mass Spectrometry, pp. 867-869.	
		Angell, James B., et al., " <i>Silicon Micromechanical Devices</i> ," 1983, Scientific American, pp. 44-55.	
		Beavis, R.C., et al., " <i>Off-Line Coupling of a Microbore High-Performance Liquid Chromatograph to a Secondary Ion-Time of Flight Mass Spectrometer</i> ," 1990, Analytical Chemistry, pp. 1259-1264.	
		Beavis, Ronald C., et al., " <i>Automated Dry Fraction Collection for Microbore High-Performance Liquid Chromatography-Mass Spectrometry</i> , 1986, Journal of Chromatography, 359, pp. 489-497.	
		Bing He, Niall Talt, Fred Regnier, " <i>Fabrication on Nanocolumns for Liquid Chromatography</i> ," Analytical Chemistry, Vol. 70, No. 18, September, 1998, pages 3790-3797.	
		Burggrat, Norbert, et al., " <i>Synchronized Cyclic Capillary Electrophoresis - A Novel Approach to Ion Separations in Solution</i> ", October, 1993, Journal of High Resolution Chromatography, Vol. 16, pp. 594-596.	
		Cheng, Jing, et al., " <i>Chip PCR.II. Investigation of Different PCR Amplification Systems in Microfabricated Silicon-Glass Chips</i> ," 1996, Nucleic Acids Research, Vol. 24, No. 2, pp. 380-385.	
		Chu, Yen-Ho, et al., " <i>Affinity Capillary Electrophoresis-Mass Spectrometry for Screening Combinatorial Libraries</i> ," 1996, Journal of the American Chemical Society, pp. 7827-7835.	

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		Cowan, S., et al., <i>"An On-Chip Miniature Liquid Chromatography System: Design, Construction and Characterization,"</i> 1995, Micro Total Analysis Systems, pp. 295-298.	
		D. Figeys, et al., <i>Analytical Chemistry</i> , Vol. 69, August 1977, pp. 3153-3160	
		D. Jed Harrison; Karl Fluri; Kurt Seiler; Zhonghui Fan; Carlo S. Effenhauser; and, Andreas Manz, <i>"Micromachining a Miniaturized Capillary Electrophoresis-Based Chemical Analysis System on a Chip,"</i> <i>Science</i> , Vol. 261, August 1993, 895-897.	
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		Deml, M., et al., <i>"Electric Sampler Splitter for Capillary Zone Electrophoresis,"</i> 1985, <i>Journal of Chromatography</i> , 320, pp. 159-165.	
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Application Number	10/814,207
Filing Date	03/31/2004
First Named Inventor	James E. Moon
Art Unit	
Examiner Name	
Attorney Docket Number	48900-01020

Sheet 8

of 8

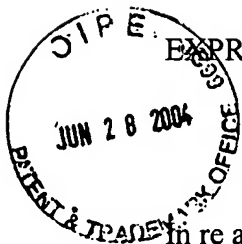
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US PATENT APPLICATION

Docket No. 48900-01020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Moon, James E., et al.

Application No.:

10/814,207

) Art Unit

Filed:

March 31, 2004

For:

ELECTROSPRAY NOZZLE AND
MONOLITHIC SUBSTRATE

Examiner:

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DATED this 28 day of June, 2004.

Respectfully submitted,

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